WHAT IS CLAIMED IS:

1. An active vibration suppression apparatus comprising:

an actuator which is fixed to a vibration suppression target and generates a thrust;

an inertial load which is connected to said actuator and is driven relative to the vibration suppression target in accordance with the thrust generated by said actuator; and

a driving circuit for generating a driving command signal for controlling driving of said inertial load and driving said actuator in accordance with the driving command signal,

wherein said actuator drives said inertial load with the generated thrust, and applies a drive reaction force generated upon driving of the inertial load as a control force to the vibration suppression target, thereby reducing vibrations produced in the vibration suppression target.

2. The apparatus according to claim 1, wherein said actuator generates a thrust in a straight direction to drive said inertial load in the straight direction, and reduces vibrations of the vibration suppression target in the straight direction with a drive reaction force in the straight direction.

3. The apparatus according to claim 1, further comprising:

a vibration detection unit for detecting vibrations of the vibration suppression target; and

a compensation computation section for performing compensation computation processing for a signal corresponding to the vibrations of the vibration suppression target which are detected by said vibration detection unit.

4. The apparatus according to claim 3, wherein said compensation computation section performs a nonlinear compensation computation for the signal corresponding to the vibrations of the vibration suppression target which are detected by said vibration detection unit.

5. The apparatus according to claim 3, wherein said driving circuit generates a driving command signal for driving said actuator on the basis of a signal obtained by said compensation computation section, and said actuator generates a control force for reducing the vibrations of the vibration suppression target by driving said inertial load on the basis of the driving command signal.

6. The apparatus according to claim 4, wherein said compensation computation section performs a linear compensation computation including at least one of proportional compensation, integral compensation, differential compensation, phase-lead compensation, and phase-lag compensation for a signal corresponding to the vibrations of the vibration suppression target

which are detected by said vibration detection unit, and further performs a nonlinear compensation computation for a signal having undergone the linear compensation computation.

7. The apparatus according to claim 4, wherein the nonlinear compensation computation is described by a nonlinear function which is a monotonously increasing or decreasing function and outputs a signal obtained by multiplying an input signal by a gain whose absolute value decreases as a value of the input signal separates from a neutral point of the input signal.

8. The apparatus according to claim 1, wherein

when equipment having driving means is mounted on the vibration suppression target, or the equipment having the driving means is fastened to the vibration suppression target with high rigidity, and the driving means of the equipment vibrates the vibration suppression target,

the apparatus further comprises a feedforward compensation computation section for receiving one of a signal obtained by measuring operation of the equipment having the driving means and a control signal from a control section for the equipment and performing feedforward compensation computation processing for the signal,

said driving circuit generates a driving command signal for driving said actuator on the basis of an

output signal from said feedforward compensation computation section, and

said actuator drives said inertial load on the basis of the driving command signal, thereby generating a control force for reducing the vibrations of the vibration suppression target.

9. The apparatus according to claim 8, wherein said feedforward compensation computation section performs a nonlinear compensation computation for one of the signal obtained by measuring the operation state of the equipment having the driving means and the control signal from the control section for the equipment.

10. The apparatus according to claim 9, wherein said feedforward compensation computation section performs a linear compensation including at least one of proportional compensation, integral compensation, differential compensation, phase-lead compensation, and phase-lag compensation for the signal obtained by measuring the operation state of the equipment having the driving means and the control signal from the control section for the equipment, and further performs a nonlinear compensation for a signal having undergone the linear compensation computation.

11. The apparatus according to claim 9, wherein the nonlinear compensation computation is described by a nonlinear function which is a monotonously increasing or decreasing function and outputs a signal obtained by

multiplying an input signal by a gain whose absolute value decreases as a value of the input signal separates from a neutral point of the input signal.

12. A method of controlling an active vibration suppression apparatus, comprising:

the detection step of detecting a signal corresponding to vibrations of a vibration suppression target by using a vibration detection unit;

the acquisition step of performing processing to acquire an operation signal obtained by measuring an operation state of equipment having driving means and/or a control signal from the equipment;

the first computation step of performing a first nonlinear compensation computation for the signal detected in the detection step;

the second computation step of performing a second nonlinear compensation computation for the signal acquired in the acquisition step; and

the control step of driving an actuator and generating a control force for reducing the vibrations of the vibration suppression target on the basis of the signal having undergone the nonlinear compensation computation in the first and/or second computation step.

13. An active vibration suppression apparatus comprising:

a rotating actuator which is fixed to a vibration suppression target and generates a torque in a

rotational direction;

an inertial load which is connected to said actuator and moves in the rotational direction relative to the vibration suppression target in accordance with a torque of said actuator; and

a driving circuit for generating a driving command signal for controlling said inertial load and driving said rotating actuator in accordance with the driving command signal,

wherein said rotating actuator rotates/drives the inertial load with a generated torque, and reduces vibrations produced in the vibration suppression target by applying a drive reaction force generated upon rotating/driving said inertial load as a control torque to the vibration suppression target.

14. The apparatus according to claim 13, further comprising:

a rotational vibration detection unit for detecting vibrations of the vibration suppression target in a rotational motion direction; and

a rotational vibration compensation computation section for performing compensation computation processing for a signal corresponding to the rotational vibrations of the vibration suppression target which are detected by said rotational vibration detection unit.

15. The apparatus according to claim 14, wherein said

driving circuit generates a driving command signal for driving said rotating actuator on the basis of the signal obtained by said rotational vibration compensation computation section, and said rotating actuator rotates/drives said inertial load on the basis of the driving command signal, thereby generating a control torque for reducing the vibrations of the vibration suppression target.

16. The apparatus according to claim 13, wherein

when equipment having driving means is mounted on the vibration suppression target, or the equipment having the driving means is fastened to the vibration suppression target with high rigidity, and the driving means of the equipment vibrates the vibration suppression target,

the apparatus further comprises a second feedforward compensation computation section for receiving one of a signal obtained by measuring operation of the equipment having the driving means and a control signal from a control section for the equipment and performing feedforward compensation computation processing for the signal,

said driving circuit generates a driving command signal for driving said actuator on the basis of an output signal from said second feedforward compensation computation section, and

said actuator drives said inertial load on the

basis of the driving command signal, thereby generating a control torque for reducing the vibrations of the vibration suppression target.

17. The apparatus according to claim 1, further comprising rigidity providing means functioning to restore said inertial load to a predetermined neutral position.

18. The apparatus according to claim 13, further comprising rigidity providing means functioning to restore said inertial load to a predetermined neutral position.

19. A method of controlling an active vibration suppression apparatus, comprising:

the detection step of detecting a signal corresponding to vibrations of a vibration suppression target in a rotational direction by using a vibration detection unit;

the acquisition step of performing processing to acquire an operation signal obtained by measuring an operation state of equipment having driving means and/or a control signal from the equipment;

the first computation step of performing a first nonlinear compensation computation for the signal detected in the detection step;

the second computation step of performing a second nonlinear compensation computation for the signal acquired in the acquisition step; and

the control step of driving an actuator and generating a control torque for reducing the vibrations of the vibration suppression target on the basis of the signal having undergone the nonlinear compensation computation in the first and/or second computation step.

20. An exposure apparatus comprising:

a stage apparatus having a substrate or master plate as an exposure target mounted thereon and performing precision positioning operation; and

an active vibration suppression apparatus which acts on a surface plate on which said stage apparatus is mounted or an exposure apparatus housing structure mounted on the surface plate to reduce vibrations in the surface plate or the exposure apparatus housing structure in a translation direction which are produced upon driving of said stage apparatus,

said active vibration suppression apparatus including

an actuator which is fixed to the surface plate or exposure apparatus housing structure and generates a thrust,

an inertial load which is connected to said actuator and is driven relative to the surface plate or exposure apparatus housing structure in accordance with the thrust generated by said actuator, and

a driving circuit for generating a driving command signal for controlling driving of said inertial

load and driving said actuator in accordance with the driving command signal,

wherein said actuator drives said inertial load with the generated thrust, and applies a drive reaction force generated upon driving of the inertial load as a control force to the surface plate or exposure apparatus housing structure to reduce vibrations produced in the surface plate or the exposure apparatus housing structure.

21. An exposure apparatus comprising:

a stage apparatus having a substrate or master plate as an exposure target mounted thereon and performing precision positioning operation; and

an active vibration suppression apparatus which acts on a surface plate on which said stage apparatus is mounted or an exposure apparatus housing structure mounted on the surface plate to reduce vibrations of the surface plate or exposure apparatus housing structure in a rotational direction which are produced upon driving of said stage apparatus,

said active vibration suppression apparatus including

a rotating actuator which is fixed to the surface plate or exposure apparatus housing structure and generates a torque in a rotational direction,

an inertial load which is connected to said actuator and moves in the rotational direction relative

to the surface plate or exposure apparatus housing structure in accordance with a torque of said actuator, and

a driving circuit for generating a driving command signal for controlling said inertial load and driving said rotating actuator in accordance with the driving command signal,

wherein said rotating actuator rotates/drives the inertial load with a generated torque, and reduces vibrations produced in the surface plate or the exposure apparatus housing structure by applying a drive reaction force generated upon rotating/driving said inertial load as a control torque to the surface plate or exposure apparatus housing structure.

22. An exposure apparatus comprising:

a stage apparatus having substrate or master plate as an exposure target mounted thereon and performing precision positioning operation;

a first active vibration suppression apparatus which acts on a surface plate on which said stage apparatus is mounted or an exposure apparatus housing structure mounted on the surface plate to reduce vibrations of the surface plate or the exposure apparatus housing structure in a translation direction which are produced upon driving of said stage apparatus; and

a second active vibration suppression apparatus

for reducing rotational vibrations of the surface plate or the exposure apparatus housing structure,

wherein vibrations produced upon driving of said stage apparatus are reduced by said first active vibration suppression apparatus and/or said second active vibration suppression apparatus.

23. The apparatus according to claim 22, wherein said first active vibration suppression apparatus comprises:

an actuator which is fixed to the surface plate or the exposure apparatus housing structure and generates a thrust,

an inertial load which is connected to said actuator and is driven relative to the surface plate or the exposure apparatus housing structure in accordance with the thrust generated by said actuator, and

a driving circuit for generating a driving command signal for controlling driving of said inertial load and driving said actuator in accordance with the driving command signal,

wherein said actuator drives said inertial load with the generated thrust, and applies a drive reaction force generated upon driving of the inertial load as a control force to the surface plate or the exposure apparatus housing structure to reduce vibrations produced in the surface plate or the exposure apparatus housing structure.

24. The apparatus according to claim 22, wherein said second active vibration suppression apparatus comprises:

a rotating actuator which is fixed to the surface plate or the exposure apparatus housing structure and generates a torque in a rotational direction,

an inertial load which is connected to said actuator and moves in the rotational direction relative to the surface plate or the exposure apparatus housing structure in accordance with a torque of said actuator, and

a driving circuit for generating a driving command signal for controlling said inertial load and driving said rotating actuator in accordance with the driving command signal,

wherein said rotating actuator rotates/drives the inertial load with a generated torque, and reduces vibrations produced in the surface plate or the exposure apparatus housing structure by applying a drive reaction force generated upon rotating/driving said inertial load as a control torque to the surface plate or the exposure apparatus housing structure.

25. An exposure apparatus comprising an active vibration suppression apparatus which is mounted on a structural member of a cantilever support structure forming a housing structure of the exposure apparatus and generates a drive reaction force for

reducing/suppressing structural vibrations produced around a cantilever support portion of the structural member,

wherein said active vibration suppression apparatus comprises:

an actuator which is fixed to the structural member of the cantilever support structure and generates a thrust;

an inertial load which is connected to said actuator and is driven relative to the structural member of the cantilever support structure in accordance with the thrust generated by said actuator; and

a driving circuit for generating a driving command signal for controlling driving of said inertial load and driving said actuator in accordance with the driving command signal, and

wherein said actuator drives said inertial load with the generated thrust, and applies a drive reaction force generated upon driving of the inertial load as a control force to the structural member of the cantilever support structure to reduce vibrations produced in the structural member of the cantilever support structure.

26. An exposure apparatus comprising an active vibration suppression apparatus for reducing/suppressing rotational vibrations around a

rotation center of a support portion of a cantilever support structure forming a housing structure of the exposure apparatus with respect to a structural member of the cantilever support structure by acting in a tangential direction with respect to a direction of the rotational vibrations at a position as distant as possible from the support portion,

wherein said active vibration suppression apparatus comprises:

a actuator which is fixed to the structural member of the cantilever support structure and generates a thrust;

an inertial load which is connected to said actuator and is driven relative to the structural member of the cantilever support structure in accordance with the thrust generated by said actuator; and

a driving circuit for generating a driving command signal for controlling said inertial load and driving said actuator in accordance with the driving command signal, and

wherein said actuator drives the inertial load with a generated thrust, and reduces vibrations produced in the structural member of the cantilever support structure by applying a drive reaction force generated upon driving said inertial load as a control thrust to the structural member of the cantilever

support structure.

27. An exposure apparatus comprising an active vibration suppression apparatus for reducing/suppressing rotational vibrations around a rotation center of a support portion of a cantilever support structure forming a housing structure of the exposure apparatus with respect to a structural member of the cantilever support structure by generating a control torque in a direction of the rotational vibrations with the support portion being a rotation center,

wherein said active vibration suppression apparatus includes:

an actuator which is fixed to the structural member of the cantilever support structure and generates a thrust in a rotational direction;

an inertial load which is connected to said actuator and is driven relative to the structural member of the cantilever support structure in accordance with the thrust generated by said actuator; and

a driving circuit for generating a driving command signal for controlling said inertial load and driving said actuator in accordance with the driving command signal, and

wherein said actuator drives the inertial load with a generated thrust, and reduces vibrations

produced in the structural member of the cantilever support structure by applying a drive reaction force generated upon driving said inertial load as a control thrust to the structural member of the cantilever support structure.

28. The apparatus according to claim 25, wherein the cantilever support structure is a mechanical structure forming an illumination optical unit for emitting exposure light for exposing a photosensitive substrate to a circuit pattern formed on a master plate through an optical lens.

29. The apparatus according to claim 26, wherein the cantilever support structure is a mechanical structure forming an illumination optical unit for emitting exposure light for exposing a photosensitive substrate to a circuit pattern formed on a master plate through an optical lens.

30. The apparatus according to claim 27, wherein the cantilever support structure is a mechanical structure forming an illumination optical unit for emitting exposure light for exposing a photosensitive substrate to a circuit pattern formed on a master plate through an optical lens.

31. An exposure apparatus comprising an active vibration suppression apparatus which is installed on an apparatus mount pedestal side structure on which the exposure apparatus is installed and actively reduces

vibrations transmitted from the apparatus mount pedestal side structure to the exposure apparatus,

wherein said active vibration suppression apparatus includes:

an actuator which is fixed to a apparatus mount pedestal side structure and generates a thrust;

an inertial load which is connected to said actuator and is driven relative to the apparatus mount pedestal side structure in accordance with the thrust generated by said actuator; and

a driving circuit for generating a driving command signal for controlling driving of said inertial load and driving said actuator in accordance with the driving command signal, and

wherein said actuator drives said inertial load with the generated thrust, and applies a drive reaction force generated upon driving of the inertial load as a control force to the apparatus mount pedestal side structure, thereby reducing vibrations produced in the apparatus mount pedestal side structure.

32. A method of manufacturing a semiconductor device, comprising:

the step of installing a plurality of semiconductor manufacturing apparatuses including an exposure apparatus in a semiconductor manufacturing factory; and

the step of manufacturing a semiconductor device

by using the plurality of semiconductor manufacturing apparatuses,

the exposure apparatus including

a stage apparatus having a substrate or master plate as an exposure target mounted thereon and performing precision positioning operation, and

an active vibration suppression apparatus which acts on a surface plate on which the stage apparatus is mounted or an exposure apparatus housing structure mounted on the surface plate to reduce vibrations of the surface plate or the exposure apparatus housing structure in a translation direction which are produced upon driving of the stage apparatus,

the active vibration suppression apparatus including

an actuator which is fixed to the surface plate or the exposure apparatus housing structure and generates a thrust,

an inertial load which is connected to the actuator and is driven relative to the surface plate or the exposure apparatus housing structure in accordance with the thrust generated by the actuator, and

a driving circuit for generating a driving command signal for controlling driving of the inertial load and driving the actuator in accordance with the driving command signal,

wherein the actuator drives the inertial load

with the generated thrust, and applies a drive reaction force generated upon driving of the inertial load as a control force to the surface plate or the exposure apparatus housing structure to reduce vibrations produced in the surface plate or the exposure apparatus housing structure.

33. A method of manufacturing a semiconductor device, comprising:

the step of installing a plurality of semiconductor manufacturing apparatuses including an exposure apparatus in a semiconductor manufacturing factory; and

the step of manufacturing a semiconductor device by using the plurality of semiconductor manufacturing apparatuses,

the exposure apparatus including

a stage apparatus having a substrate or master plate as an exposure target mounted thereon and performing precision positioning operation, and

an active vibration suppression apparatus which acts on a surface plate on which the stage apparatus is mounted or an exposure apparatus housing structure mounted on the surface plate to reduce vibrations of the surface plate or the exposure apparatus housing structure in a rotational direction which are produced upon driving of the stage apparatus,

the active vibration suppression apparatus

including

a rotating actuator which is fixed to the surface plate or the exposure apparatus housing structure and generates a torque in a rotational direction,

an inertial load which is connected to the actuator and moves in the rotational direction relative to the surface plate or the exposure apparatus housing structure in accordance with a torque of the actuator, and

a driving circuit for generating a driving command signal for controlling the inertial load and driving the rotating actuator in accordance with the driving command signal,

wherein the rotating actuator rotates/drives the inertial load with a generated torque, and reduces vibrations produced in the surface plate or the exposure apparatus housing structure by applying a drive reaction force generated upon rotating/driving the inertial load as a control torque to the surface plate or the exposure apparatus housing structure.

34. The method according to claim 32, further comprising:

the step of connecting the plurality of semiconductor manufacturing apparatuses via a local area network;

the step of connecting the local area network to an external network outside the semiconductor

manufacturing factory;

the step of acquiring information associated with the exposure apparatus from a database on the external network by using the local area network and the external network; and

the step of controlling the exposure apparatus on the basis of the acquired information.

35. The method according to claim 33, further comprising:

the step of connecting the plurality of semiconductor manufacturing apparatuses via a local area network;

the step of connecting the local area network to an external network outside the semiconductor manufacturing factory;

the step of acquiring information associated with the exposure apparatus from a database on the external network by using the local area network and the external network; and

the step of controlling the exposure apparatus on the basis of the acquired information.

36. The method according to claim 34, further comprising the step of accessing a database provided by a vendor or user of the exposure apparatus via the external network to obtain maintenance information of the manufacturing apparatus by data communication, or performing production management by data communication

between the semiconductor manufacturing factory and another semiconductor manufacturing factory via the external network.

37. The method according to claim 35, further comprising the step of accessing a database provided by a vendor or user of the exposure apparatus via the external network to obtain maintenance information of the manufacturing apparatus by data communication, or performing production management by data communication between the semiconductor manufacturing factory and another semiconductor manufacturing factory via the external network.

38. A semiconductor manufacturing factory comprising:

a plurality of semiconductor manufacturing apparatuses including an exposure apparatus;

a local area network for connecting said manufacturing apparatuses; and

a gateway which connects said local area network to an external network of the semiconductor manufacturing factory and allows communication of information associated with at least one of said plurality of semiconductor manufacturing apparatuses,

said exposure apparatus including

a stage apparatus having substrate or master plate as an exposure target mounted thereon and performing precision positioning operation, and

an active vibration suppression apparatus which

acts on a surface plate on which said stage apparatus is mounted or an exposure apparatus housing structure mounted on the surface plate to reduce vibrations of the surface plate or the exposure apparatus housing structure in a translation direction which are produced upon driving of said stage apparatus,

said active vibration suppression apparatus including

an actuator which is fixed to the surface plate or the exposure apparatus housing structure and generates a thrust,

an inertial load which is connected to said actuator and is driven relative to the surface plate or the exposure apparatus housing structure in accordance with the thrust generated by said actuator, and

a driving circuit for generating a driving command signal for controlling driving of said inertial load and driving said actuator in accordance with the driving command signal,

wherein said actuator drives said inertial load with the generated thrust, and applies a drive reaction force generated upon driving of the inertial load as a control force to the surface plate or the exposure apparatus housing structure to reduce vibrations produced in the surface plate or the exposure apparatus housing structure.

39. A semiconductor manufacturing factory comprising:

a plurality of semiconductor manufacturing apparatuses including an exposure apparatus;

a local area network for connecting said manufacturing apparatuses; and

a gateway which connects said local area network to an external network of the semiconductor manufacturing factory and allows communication of information associated with at least one of said plurality of semiconductor manufacturing apparatuses,

said exposure apparatus including

a stage apparatus having a substrate or master plate as an exposure target mounted thereon and performing precision positioning operation; and

an active vibration suppression apparatus which acts on a surface plate on which said stage apparatus is mounted or an exposure apparatus housing structure mounted on the surface plate to reduce vibrations of the surface plate or the exposure apparatus housing structure in a rotational direction which are produced upon driving of said stage apparatus,

said active vibration suppression apparatus including

a rotating actuator which is fixed to the surface plate or the exposure apparatus housing structure and generates a torque in a rotational direction,

an inertial load which is connected to said actuator and moves in the rotational direction relative

to the surface plate or the exposure apparatus housing structure in accordance with a torque of said actuator, and

a driving circuit for generating a driving command signal for controlling said inertial load and driving said rotating actuator in accordance with the driving command signal,

wherein said rotating actuator rotates/drives the inertial load with a generated torque, and reduces vibrations produced in the surface plate or the exposure apparatus housing structure by applying a drive reaction force generated upon rotating/driving said inertial load as a control torque to the surface plate or the exposure apparatus housing structure.

40. A maintenance method for an exposure apparatus, comprising:

the step of causing a vendor or user of the exposure apparatus to provide a maintenance database connected to an external network of the semiconductor manufacturing factory;

the step of allowing access from the semiconductor manufacturing factory to the maintenance database via the external network; and

the step of transmitting maintenance information accumulated in the maintenance database to the semiconductor manufacturing factory via the external network, and maintaining the exposure apparatus on the

basis of the maintenance information,

wherein the exposure apparatus includes

a stage apparatus having substrate or master plate as an exposure target mounted thereon and performing precision positioning operation, and

an active vibration suppression apparatus which acts on a surface plate on which the stage apparatus is mounted or an exposure apparatus housing structure mounted on the surface plate to reduce vibrations of the surface plate or the exposure apparatus housing structure in a translation direction which are produced upon driving of the stage apparatus,

the active vibration suppression apparatus includes

an actuator which is fixed to the surface plate or the exposure apparatus housing structure and generates a thrust,

an inertial load which is connected to the actuator and is driven relative to the surface plate or the exposure apparatus housing structure in accordance with the thrust generated by the actuator, and

a driving circuit for generating a driving command signal for controlling driving of the inertial load and driving the actuator in accordance with the driving command signal, and

wherein the actuator drives the inertial load with the generated thrust, and applies a drive reaction

force generated upon driving of the inertial load as a control force to the surface plate or the exposure apparatus housing structure to reduce vibrations produced in the surface plate or the exposure apparatus housing structure.

41. A maintenance method for an exposure apparatus, comprising:

the step of causing a vendor or user of the exposure apparatus to provide a maintenance database connected to an external network of the semiconductor manufacturing factory;

the step of allowing access from the semiconductor manufacturing factory to the maintenance database via the external network; and

the step of transmitting maintenance information accumulated in the maintenance database to the semiconductor manufacturing factory via the external network, and maintaining the exposure apparatus on the basis of the maintenance information,

wherein the exposure apparatus includes a stage apparatus having a substrate or master plate as an exposure target mounted thereon and performing precision positioning operation, and

an active vibration suppression apparatus which acts on a surface plate on which the stage apparatus is mounted or an exposure apparatus housing structure mounted on the surface plate to reduce vibrations of

the surface plate or the exposure apparatus housing structure in a rotational direction which are produced upon driving of the stage apparatus,

the active vibration suppression apparatus including

a rotating actuator which is fixed to the surface plate or the exposure apparatus housing structure and generates a torque in a rotational direction,

an inertial load which is connected to the actuator and moves in the rotational direction relative to the surface plate or the exposure apparatus housing structure in accordance with a torque of the actuator, and

a driving circuit for generating a driving command signal for controlling the inertial load and driving the rotating actuator in accordance with the driving command signal, and

wherein the rotating actuator rotates/drives the inertial load with a generated torque, and reduces vibrations produced in the surface plate or the exposure apparatus housing structure by applying a drive reaction force generated upon rotating/driving the inertial load as a control torque to the surface plate or the exposure apparatus housing structure.

42. The apparatus according to claim 20, wherein the apparatus further comprises a display for displaying maintenance information, a network interface which is

connected to a computer network to communicate the maintenance information, and a computer for executing the communication by using network software, and can perform data communication of maintenance information of the exposure apparatus via the computer network.

43. The apparatus according to claim 21, wherein the apparatus further comprises a display for displaying maintenance information, a network interface which is connected to a computer network to communicate the maintenance information, and a computer for executing the communication by using network software, and can perform data communication of maintenance information of the exposure apparatus via the computer network.

44. The apparatus according to claim 42, wherein the network software provides, on said display, a user interface which is connected to the external network of the factory in which the exposure apparatus is installed and used to access the maintenance database provided by the vendor or user of the exposure apparatus, and allows acquisition of information from the database via the external network.

45. The apparatus according to claim 43, wherein the network software provides, on said display, a user interface which is connected to the external network of the factory in which the exposure apparatus is installed and used to access the maintenance database provided by the vendor or user of the exposure

apparatus, and allows acquisition of information from the database via the external network.